



# UNDERSTANDING AND LEVERAGING THE INFLATION REDUCTION ACT OF 2022



YOUR PRESENTER TODAY  
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# INFLATION REDUCTION ACT OF 2022

## Navigating IRA Incentives for Geothermal Solutions

**Commercial and residential geothermal projects now qualify for IRA tax credits up to 30%-50% of cost with additional saving incentives and rebates.**



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# OBJECTIVES

- Learn what inspired this legislation and incentives in response to energy and climate concerns.
- Understand how the IRA incentives work and what opportunities they present for HVAC and building design professionals.
- Understand Geothermal technology and how these systems create opportunities for more incentives and rebates.
- Understand how geothermal manufacturers are supporting commercial partners in energy reduction efforts.

# Inflation Reduction Act Political Drivers



## RISING ENERGY COSTS

- ❑ Brent crude oil prices up 254% from 2020 to 2022 (EIA)
- ❑ Henry Hub natural gas prices up 239% from 2020 to 2022 (EIA)
- ❑ Electricity prices up 13% from 2020 to 2022 (EIA)



## ENERGY SECURITY CONCERNS

- ❑ OPEC embargos of 1970s
- ❑ Middle East wars
- ❑ Hurricane Katrina
- ❑ Ukraine war



## ENVIRONMENTAL AND CLIMATE CONCERNS

- ❑ Major oil spills
- ❑ Kyoto Protocol and Paris Agreement
- ❑ ANWR lease suspension
- ❑ Weather related events



## ELECTRIC GRID CONCERNS

- ❑ Blackouts, aging infrastructure, threat of cyberattacks
- ❑ Renewable reliability, beneficial electrification, electric vehicles
- ❑ Loss of coal baseload plants

# Geothermal Heat Pump Political Drivers



## 50 STATE TECHNOLOGY

- ❑ Ground temperature resource is available everywhere
- ❑ GHP systems are operating in all 50 states



## ADDRESSES ONE OF THE LARGEST COMPONENTS OF US ENERGY CONSUMPTION

- ❑ Building sector globally consumes more energy at 34% than transport sector at 27% or industry sector at 28%
- ❑ Globally, heating and cooling accounts for 50% of energy consumption and 39% of global greenhouse gas emissions



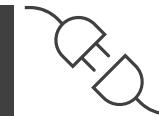
## DOMESTIC TECHNOLOGY & SYSTEM CONTENT

- ❑ Widely, components for drill rigs, tools and GHPs are US made
- ❑ Growth of GHP driving local job creation at extreme rates



## PRODUCES MAXIMUM BENEFITS "ON PEAK"

- ❑ Renewable kWh production, air-source heat pumps and electric vehicles stress grid at peak
- ❑ GHPs provide maximum demand reduction when running 100%



## BENEFICIAL ELECTRIFICATION

- ❑ Electricity is becoming "cleaner"
- ❑ –US CO<sub>2</sub> per kWh is down nearly 40%
- ❑ Heat pumps are the best way to convert clean electricity into thermal energy

# RESIDENTIAL GHP Tax Incentives Inflation Reduction Act



## FEDERAL INCOME TAX CREDIT

- ✓ **Residential Clean Energy Credit - IRC Section 25D**
- ✓ 30% of GHP system cost basis (26% 2033, 22% 2034)
- ✓ No cap on total credit amount
- ✓ Can be combined with solar and other credits
- ✓ Can be used in more than one year
- ✓ Can be used for more than one home
- ✓ Credits are not refundable
- ✓ Can be carried forward for a maximum of 10 years
- ✓ Exempt from AMT

- 
- ✓ **Home must be located in the US**
  - ✓ Includes houses, cooperatives, condos, mobile homes
  - ✓ Does not have to be main home
  - ✓ GHP must meet Energy Star requirements
  - ✓ Placed in service before 12/31/2034
  - ✓ Does not include ductwork or downstream distribution systems



## ELIGIBILITY

# OTHER INCENTIVES



## Inflation Reduction Act



For Home Builders

### NEW ENERGY EFFICIENT HOME CREDIT

- ✓ Home must meet or exceed most recent Energy Star criteria
- ✓ \$2500 tax credit (up to \$5000 credit if “zero-energy” ready)
- ✓ Home acquired before 1-1-2033



For Commercial Buildings

### ENERGY EFFICIENT COMMERCIAL BUILDINGS DEDUCTION

- ✓ Must exceed ASHRAE 90.1 2007 requirements by 25%
- ✓ 0.50 to \$1.00 per square foot (max based on 50% savings level)
- ✓ 2.50 to \$5.00 per square foot if meets prevailing wage
- ✓ Can be assigned to design team for tax-exempt entities
- ✓ Placed in service after 12-31-22



For GHPs

### UTILITY INCENTIVES

- ✓ Residential and Commercial rebates are available in many areas



## Inflation Reduction Act Section 48

### Geothermal Tax Credit Incentives

- ✓ The IRA extends Section 48 under a two-tiered structure
- ✓ Increased from 10% prior to IRA
- ✓ A base rate of 6%
- ✓ A bonus rate of 30%
- ✓ 30% of total GHP system cost basis through 2032
- ✓ Step down to 26% in 2033, 22% in 2034, sunseting 2035

### Bonus Rate Qualifiers

- ✓ A project with a maximum net output < 1MW of electrical or thermal energy
- or
- ✓ Meet prevailing wage rate and apprenticeship requirements
- ✓ or
- ✓ Projects commenced within 60 days of published rules
- ✓ November 30, 2022, the IRS issued Notice 2022-61
- ✓ Construction started after January 29, 2023

### GEO THERMAL TAX CREDITS

BASE RATE	6%
Bonus rate = 5X base rate	30%
MADE IN USA 2023	10%
ENERGY COMMUNITY 2023	10%
Total INCENTIVE OPPORTUNITY	50%

## Inflation Reduction Act Section 48

### Domestic Content Bonus

**ADD 10%**

- ✓ *Up to 10% adder for domestic content*
- ✓ *Based on the percentage of the cost of iron, steel, or manufactured product must be produced in the United States*
- ✓ *Construction beginning before 2025 = 40%, in 2025 = 45%, in 2026 = 50%, after 2026 = 55%*

### Energy Communities

**ADD 10%**

- ✓ *Up to 10% adder for energy communities*
- ✓ *Census tract or adjoining tract with coal mine closed since 2000, or*
- ✓ *Census tract or adjoining tract with coal plant closed since 2010, or*
- ✓ *Defined as "a brownfield site" by the EPA, or*
- ✓ *Area with 0.17% employment related to coal, oil or natural gas with higher-than-average unemployment, or*
- ✓ *Area with 25% tax revenue related to coal, oil, or natural gas with higher-than-average unemployment*

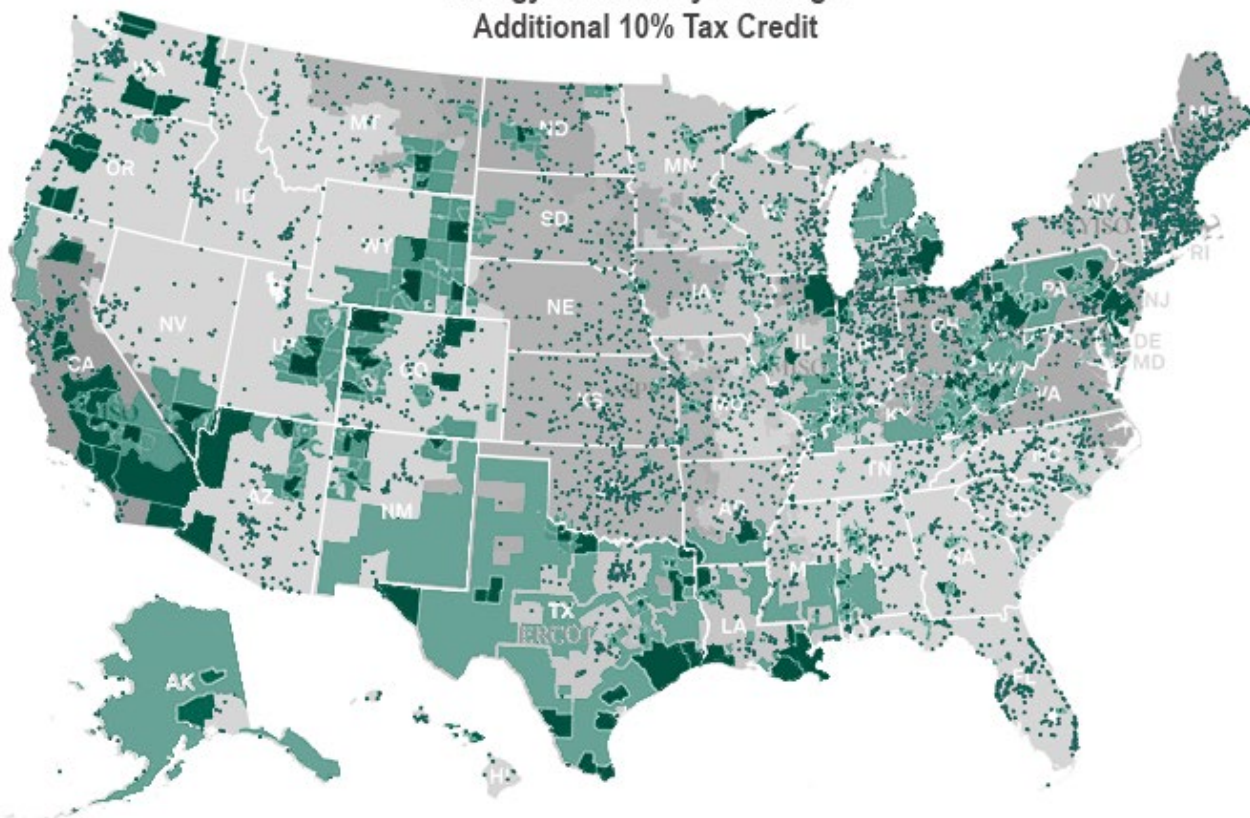
GETTING FROM  
30% TO 50%



## Inflation Reduction Act Section 48

### Energy Communities - National Coverage

Energy Community Coverage  
Additional 10% Tax Credit



- ✓ Up to 10% adder for energy communities
- ✓ Census tract or adjoining tract with coal mine closed since 2000, or
- ✓ Census tract or adjoining tract with coal plant closed since 2010, or
- ✓ Defined as "a brownfield site" by the EPA, or
- ✓ Area with 0.17% employment related to coal, oil or natural gas with higher-than-average unemployment, or
- ✓ Area with 25% tax revenue related to coal, oil, or natural gas with higher-than-average unemployment

As of Sep. 14, 2022.  
Map credit: Ciaralou Agpalo Palicpic.  
Source: U.S. Environmental Protection Agency.  
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## Inflation Reduction Act Section 48



- ✓ 5-year MACR depreciation for GHP system cost basis (less 50% of tax credit)
- ✓ Eligible for bonus depreciation (80% 2023, 60% 2024, 40% 2025, 20% 2026)

- ✓ Building located in the U.S.
- ✓ Original use begins with taxpayer
- ✓ Project commenced before 12/31/2034
- ✓ At least 75% of energy from ground source
- ✓ Includes bore field, heat pump, and certain downstream items



ELIGIBILITY

## Inflation Reduction Act Section 48



### NON-TAXBLE ENTITIES REBATES AND TRANSFERS

#### **Non-Taxable Entity Rebates**

- ✓ Direct rebate equal to credit for non-taxable entities
- ✓ Non-profits, state and local government, schools, tribes, electric cooperatives

#### **Transfer or Sale of the Rebate**

- ✓ Can be transferred or sold
- ✓ The IRA added a provision to permit project owners (other than tax-exempt entities) to make an election to transfer the ITC to an unrelated third party.
- ✓ Equal to the amount that the third party paid for the tax credit and it:
- ✓ Must be paid in cash
- ✓ Not included in gross income of transferee
- ✓ Is not deductible to the transferor

# REAL ECONOMICS

NON-TAXABLE ENTITY

# GEO ECONOMICS TOOL - IRA

## How it Works



**ClimateMaster** Geothermal HVAC Economics - using Special Depreciation Allowance Updated 3-20-23 based on current data  
This is an estimating tool only. [Click Here](#) for Disclaimer, Terms & Conditions

Project Name:

Conditioned Area (sq ft):  Vertical Market:  State:

sq ft per ton:  Tip: 400 sq ft per ton is a typical rule of thumb for commercial buildings. Variables that affect this include glass area and type, insulation values, lighting and plug load, etc.

Calculated HVAC Tons:  Brief Description:  Business Type:

Geothermal Costs		vs.	Conventional Costs	
Geothermal HVAC Cost	<input type="text" value="\$32.00"/> per sq ft		Conventional HVAC Cost	<input type="text" value="\$22.00"/> per sq ft
	<input type="text" value="\$12,800"/> per ton			<input type="text" value="\$8,800"/> per ton
	<input type="text" value="\$ 1,600,000"/> Total Geothermal HVAC Cost			<input type="text" value="\$ 1,100,000"/> Total Conventional HVAC Cost
<i>Describe your Geothermal System</i>	<input type="text" value="i.e. 30 EER geothermal heat pumps"/>		<i>Describe your Conventional HVAC System:</i>	<input type="text" value="i.e. Rooftop single-duct VAV with electric terminal reheat"/>

Additional Cost: \$ 500,000  
 Utility Rebate\* \$ (25,000)  
 Net Additional Cost: \$ 475,000  per ton estimate of utility geo rebate Tip: Varies based on region and incentives. Consult your local energy program specialist for insight.

Other Installation Costs\*\*:  portion of electrical, plumbing and GC fees related to HVAC system (for either system) Tip: Rely on your experience / cost quotes to estimate this number

Income Tax Rate:  Corporate / Federal  State  Based on business type and state table in Input Data Tab

Energy Credit:  Domestic Content Credit:  Energy Community Credit:  Tip: Choose applicable credit rate % under IRA Guidelines

Energy Inflation:  Tip: This number typically follows economic inflation trends. Generally between 2% to 8%

Savings per sq ft:  in energy and maintenance Tip: Lean on the experience of your trusted HVAC professional to estimate this savings vs. alternative systems

Annual Cost Savings:  calculated

Project Completion Year:  Project Completion Quarter:

YEAR	GEO DEPREC ALLOWANCE		GEO DEPREC DEDUCTION		GEO TAX SAVINGS****		Addtl Cost	GEO CASH FLOW			CONV CASH FLOW		GEO NET CASH FLOW	
	Special	5 Yr MACRS	Special	5 Yr MACRS	Tax Credits	Depreciation		Tax Savings	O&M Savings	Total	Depr Ded	Tax Savings	Annual	Cumulative
2023	80%	15.00%	\$ 1,020,000	\$ 38,250	\$ 850,000	\$ 355,572	\$ (475,000)	\$ 1,205,572	\$ 9,375	\$ 739,947	\$ 31,410	\$ 10,554	\$ 729,393	\$ 729,393
2024		34.00%		\$ 86,700		\$ 29,131		\$ 29,131	\$ 39,375	\$ 68,506	\$ 31,410	\$ 10,554	\$ 57,952	\$ 787,346
2025		20.40%		\$ 52,020		\$ 17,479		\$ 17,479	\$ 41,344	\$ 58,822	\$ 31,410	\$ 10,554	\$ 48,269	\$ 835,614
2026		12.24%		\$ 31,212		\$ 10,487		\$ 10,487	\$ 43,411	\$ 53,898	\$ 31,410	\$ 10,554	\$ 43,344	\$ 878,958
2027		11.30%		\$ 28,815		\$ 9,682		\$ 9,682	\$ 45,581	\$ 55,263	\$ 31,410	\$ 10,554	\$ 44,709	\$ 923,668
2028		7.06%		\$ 18,003		\$ 6,049		\$ 6,049	\$ 47,861	\$ 53,910	\$ 31,410	\$ 10,554	\$ 43,356	\$ 967,024
2029									\$ 50,254	\$ 50,254	\$ 31,410	\$ 10,554	\$ 39,700	\$ 1,006,723
2030									\$ 52,766	\$ 52,766	\$ 31,410	\$ 10,554	\$ 42,212	\$ 1,048,936
2031									\$ 55,405	\$ 55,405	\$ 31,410	\$ 10,554	\$ 44,851	\$ 1,093,787
2032									\$ 58,175	\$ 58,175	\$ 31,410	\$ 10,554	\$ 47,621	\$ 1,141,408
2033									\$ 61,084	\$ 61,084	\$ 31,410	\$ 10,554	\$ 50,530	\$ 1,191,937

Geothermal HVAC systems are classified as "Energy Property" which are eligible for 5 yr MACR depreciation and a special depreciation allowance  
 Conventional HVAC systems are generally only eligible for 39 yr (27.5 yr residential) straightline depreciation under tax code with no special depreciation allowance  
 Analysis assumes a mid-quarter depreciation convention based on the substantial completion quarter  
 Tax credits may be carried back up to 3 years for credits arising in tax years beginning after 12/31/22  
 Tax credits may be transferred (generally sold at some discount) to an unrelated party beginning in 2023  
 Energy credit limited to 10%; and domestic content and energy community tax credits are not available for projects placed in service before 1/1/23

<b>Simple Payback Years:</b>	0
<b>Internal Rate of Return:</b>	infinite

### Installation Comparison

Traditional HVAC	\$1,700,000
Geothermal	\$2,200,000

### Geothermal Savings

IRA Tax Credit	\$860,000
Savings per Sq Ft	.75

### Geo Cumulative Savings

Year 1	\$787,346
Year 5	\$967,024
Year 10	\$1,191,937

# PRE-IRA REAL ECONOMICS

## Non-Taxable Entity



**ClimateMaster** Geothermal HVAC Economics - using Special Depreciation Allowance Updated 3-22-21 based on current data  
This is an estimating tool only. [Click Here](#) for Disclaimer, Terms & Conditions

Project Name:

Conditioned Area (sq ft):  Vertical Market:  State:

sq ft per ton:  Tip: 400 sq ft per ton is a typical rule of thumb for commercial buildings. Variables that effect this include glass area and type, insulation values, lighting and plug load, etc.

Calculated HVAC Tons:  Brief Description:  Business Type:

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**Geothermal Costs**

Geothermal HVAC Cost:  per sq ft  
 per ton  
 Total Geothermal HVAC Cost

Describe your Geothermal System:

vs.

**Conventional Costs**

Conventional HVAC Cost:  per sq ft  
 per ton  
 Total Conventional HVAC Cost

Describe your Conventional HVAC System:

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Additional Cost: \$ 228,480  
 Utility Rebate\*: \$ (16,950)  
 Net Additional Cost: \$ 211,530  per ton estimate of utility geo rebate Tip: Varies based on region and incentives. Consult your local energy program specialist for insight.

Other Installation Costs\*\*:  portion of electrical, plumbing and GC fees related to HVAC system (for either system) Tip: Rely on your experience / cost quotes to estimate this number

Income Tax Rate:  Corporate / Federal:  State:  Based on business type and state table in Input Data Tab

Energy Credit:  Domestic Content Credit:  Energy Community Credit:  Tip: Choose applicable credit rate % under IRA Guidelines

Energy Inflation:  Tip: This number typically follows economic inflation trends. Generally between 2% to 8%

Savings per sq ft:  in energy and maintenance Tip: Lean on the experience of your trusted HVAC professional to estimate this savings vs. alternative systems

Annual Cost Savings:  calculated

Project Completion Year:  Project Completion Quarter:

YEAR	GEO DEPREC ALLOWANCE		GEO DEPREC DEDUCTION		GEO TAX SAVINGS***		GEO CASH FLOW			CONV CASH FLOW		GEO NET CASH FLOW		
	Special	5 Yr MACRS	Special	5 Yr MACRS	Tax Credits	Depreciation	Addtl Cost	Tax Savings	O&M Savings	Total	Depr Ded	Tax Savings	Annual	Cumulative
2023	0%	0.00%	\$ -	\$ -	\$ -	\$ -	\$ (211,530)	\$ -	\$ 8,500	\$ (203,030)	\$ -	\$ -	\$ (203,030)	\$ (203,030)
2024		0.00%		\$ -		\$ -		\$ -	\$ 35,020	\$ 35,020	\$ -	\$ -	\$ 35,020	\$ (168,010)
2025		0.00%		\$ -		\$ -		\$ -	\$ 36,071	\$ 36,071	\$ -	\$ -	\$ 36,071	\$ (131,939)
2026		0.00%		\$ -		\$ -		\$ -	\$ 37,153	\$ 37,153	\$ -	\$ -	\$ 37,153	\$ (94,787)
2027		0.00%		\$ -		\$ -		\$ -	\$ 38,267	\$ 38,267	\$ -	\$ -	\$ 38,267	\$ (56,519)
2028		0.00%		\$ -		\$ -		\$ -	\$ 39,415	\$ 39,415	\$ -	\$ -	\$ 39,415	\$ (17,104)
2029									\$ 40,598	\$ 40,598	\$ -	\$ -	\$ 40,598	\$ 23,494
2030									\$ 41,816	\$ 41,816	\$ -	\$ -	\$ 41,816	\$ 65,309
2031									\$ 43,070	\$ 43,070	\$ -	\$ -	\$ 43,070	\$ 108,380
2032									\$ 44,362	\$ 44,362	\$ -	\$ -	\$ 44,362	\$ 152,742
2033									\$ 45,693	\$ 45,693	\$ -	\$ -	\$ 45,693	\$ 198,435

Geothermal HVAC systems are classified as "Energy Property" which are eligible for 5 yr MACRS depreciation and a special depreciation allowance  
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 Analysis assumes a mid-quarter depreciation convention based on the substantial completion quarter  
 Tax credits may be carried back up to 3 years for credits arising in tax years beginning after 12/31/22  
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Simple Payback Years: 5.4

Internal Rate of Return: 14%

### Installation Comparison

Traditional HVAC **\$845,170**

Geothermal **\$1,073,650**

### Geothermal Savings

IRA Tax Rebate **\$0**

Savings per Sq Ft **1.00**

### Geo Cumulative Savings

Year 1 **(\$168,010)**

Year 5 **(\$37,04)**

Year 10 **\$198,435**



# IRA ECONOMICS

## Non-Taxable Entity



**ClimateMaster** Geothermal HVAC Economics - using Special Depreciation Allowance Updated 3-22-23 based on current data  
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Project Name:

Conditioned Area (sq ft):  Vertical Market:  State:

sq ft per ton:  Tip: 400 sq ft per ton is a typical rule of thumb for commercial buildings. Variables that effect this include glass area and type, insulation values, lighting and plug load, etc.

Calculated HVAC Tons:  Brief Description:  Business Type:

---

**Geothermal Costs**

Geothermal HVAC Cost:  per sq ft  
 per ton  
 Total Geothermal HVAC Cost

Describe your Geothermal System:

Additional Cost: \$ 228,480  
 Utility Rebate\*: \$ (16,950)  
 Net Additional Cost: \$ 211,530

Other Installation Costs\*\*:  portion of electrical, plumbing and GC fees related to HVAC system (for either system)

Income Tax Rate:  Corporate / Federal:  State:  Based on business type and state table in Input Data Tab

Energy Credit:  Domestic Content Credit:  Energy Community Credit:  Tip: Choose applicable credit rate % under IRA Guidelines

Energy Inflation:  Tip: This number typically follows economic inflation trends. Generally between 2% to 8%

Savings per sq ft:  in energy and maintenance Tip: Lean on the experience of your trusted HVAC professional to estimate this savings vs. alternative systems

Annual Cost Savings:  calculated

**vs.**

**Conventional Costs**

Conventional HVAC Cost:  per sq ft  
 per ton  
 Total Conventional HVAC Cost

Describe your Conventional HVAC System:

Tip: Varies based on region and incentives. Consult your local energy program specialist for insight.

Other Installation Costs\*\*:

Project Completion Year:

Project Completion Quarter:

YEAR	GEO DEPREC ALLOWANCE		GEO DEPREC DEDUCTION		GEO TAX SAVINGS***		Addtl Cost	GEO CASH FLOW			CONV CASH FLOW		GEO NET CASH FLOW	
	Special	5 Yr MACRS	Special	5 Yr MACRS	Tax Credits	Depreciation		Tax Savings	O&M Savings	Total	Depr Ded	Tax Savings	Annual	Cumulative
2023	0%	0.00%	\$ -	\$ -	\$ 422,585	\$ -	\$ (211,530)	\$ 422,585	\$ 8,500	\$ 219,555	\$ -	\$ -	\$ 219,555	\$ 219,555
2024		0.00%		\$ -		\$ -		\$ -	\$ 35,020	\$ 35,020	\$ -	\$ -	\$ 35,020	\$ 254,575
2025		0.00%		\$ -		\$ -		\$ -	\$ 36,071	\$ 36,071	\$ -	\$ -	\$ 36,071	\$ 290,646
2026		0.00%		\$ -		\$ -		\$ -	\$ 37,153	\$ 37,153	\$ -	\$ -	\$ 37,153	\$ 327,798
2027		0.00%		\$ -		\$ -		\$ -	\$ 38,267	\$ 38,267	\$ -	\$ -	\$ 38,267	\$ 366,066
2028		0.00%		\$ -		\$ -		\$ -	\$ 39,415	\$ 39,415	\$ -	\$ -	\$ 39,415	\$ 405,481
2029									\$ 40,598	\$ 40,598	\$ -	\$ -	\$ 40,598	\$ 446,079
2030									\$ 41,816	\$ 41,816	\$ -	\$ -	\$ 41,816	\$ 487,894
2031									\$ 43,070	\$ 43,070	\$ -	\$ -	\$ 43,070	\$ 530,965
2032									\$ 44,362	\$ 44,362	\$ -	\$ -	\$ 44,362	\$ 575,327
2033									\$ 45,693	\$ 45,693	\$ -	\$ -	\$ 45,693	\$ 621,020

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 Tax credits may be transferred (generally sold at some discount) to an unrelated party beginning in 2023  
 Energy credit limited to 10% and domestic content and energy community tax credits are not available for projects placed in service before 1/1/23

Simple Payback Years: 0

Internal Rate of Return: infinite

### Installation Comparison

**Traditional HVAC**                      **\$845,170**

**Geothermal**                              **\$1,073,650**

### Geothermal Savings

**IRA Tax Rebate**                      **\$422,585**

**Savings per Sq Ft**                      **1.00**

### Geo Cumulative Savings

**Year 1**                                      **\$254,575**

**Year 5**                                      **\$366,066**

**Year 10**                                      **\$621,020**

# REAL ECONOMICS

CLASS A OWNER-OCCUPIED  
CORPORATE HQ BUILDING



# PRE-IRA REAL ECONOMICS

## 50% Bonus and 5 Year MACRS Depreciation



**ClimateMaster** Geothermal HVAC Economics - using 5 Years Depreciation Allowance *Updated 3-28-23 based on current data*  
This is an estimating tool only. [Click Here](#) for Disclaimers, Terms & Conditions

Project Name: **Gulfport Energy HQ Building**

Conditioned Area (sq ft): **118,000** Vertical Market: **Office** State: **Oklahoma**

sq ft per ton: **290** *Tip: 400 sq ft per ton is a typical rule of thumb for commercial buildings. Variables that effect this include glass area and type, insulation values, lighting and plug load, etc.*

Calculated HVAC Tons: **407** Brief Description: **2 Story Structure** Business Type: **Pass-through Entities**

Geothermal Costs				vs.	Conventional Costs			
Geothermal HVAC Cost	<b>\$29.34</b>	per sq ft		Conventional HVAC Cost	<b>\$25.87</b>	per sq ft		
	<b>\$8,506</b>	per ton			<b>\$7,500</b>	per ton		
	<b>\$ 3,462,120</b>	Total Geothermal HVAC Cost			<b>\$ 3,052,660</b>	Total Conventional HVAC Cost		
<small>Describe your Geothermal System</small>				<small>Describe your Conventional HVAC System</small>				
i.e. 30 EER geothermal heat pumps				i.e. Rooftop single-duct VAV with electric terminal reheat				

Additional Cost: \$ 409,460  
 Utility Rebate\* \$ (237,281)  
 Net Additional Cost: \$ 172,179 **\$583** per ton estimate of utility geo rebate *Tip: Varies based on region and incentives. Consult your local energy program specialist for insight.*

Other Installation Costs\*\*: **\$ 443,086** portion of electrical, plumbing and GC fees related to HVAC system (for either system) *Tip: Rely on your experience / cost quotes to estimate this number.*

Income Tax Rate: **40%** Corporate / Federal **34.00%** State **6.00%** *Based on business type and state table in Input Data Tab*

Energy Credit: **10%** Domestic Content Credit: **0%** Energy Community Credit: **0%**

Energy Inflation: **3%** *Tip: This number typically follows economic inflation trends. Generally between 2% to 8%.*

Savings per sq ft: **\$1.00** in energy and maintenance *Tip: Lean on the experience of your trusted HVAC professional to estimate this savings vs. alternative systems.*

Annual Cost Savings: **\$ 118,000** calculated

YEAR	GEO DEPREC ALLOWANCE		GEO DEPREC DEDUCTION		GEO TAX SAVINGS***		GEO CASH FLOW				CONV CASH FLOW		GEO NET CASH FLOW	
	Special	5 Yr MACRS	Special	5 Yr MACRS	Tax Credits	Depreciation	Addtl Cost	Tax Savings	O&M Savings	Total	Depr Ded	Tax Savings	Annual	Cumulative
2016	50%	5.00%	\$ 1,742,148	\$ 87,119	\$ 366,793	\$ 731,702	\$ (172,179)	\$ 1,098,495	\$ -	\$ 926,316	\$ 89,630	\$ 35,852	\$ 890,523	\$ 890,523
2017		38.00%		\$ 662,105		\$ 264,842		\$ 264,842	\$ 121,540	\$ 386,382	\$ 89,630	\$ 35,852	\$ 301,878	\$ 1,192,401
2018		22.80%		\$ 397,263		\$ 158,905		\$ 158,905	\$ 125,186	\$ 284,091	\$ 89,630	\$ 35,852	\$ 198,143	\$ 1,390,544
2019		13.68%		\$ 238,358		\$ 95,343		\$ 95,343	\$ 128,942	\$ 224,285	\$ 89,630	\$ 35,852	\$ 136,843	\$ 1,527,387
2020		10.94%		\$ 190,616		\$ 76,247		\$ 76,247	\$ 132,810	\$ 209,057	\$ 89,630	\$ 35,852	\$ 120,070	\$ 1,647,457
2021		9.58%		\$ 166,920		\$ 66,768		\$ 66,768	\$ 136,794	\$ 203,562	\$ 89,630	\$ 35,852	\$ 112,984	\$ 1,760,441
2022									\$ 140,898	\$ 140,898	\$ 89,630	\$ 35,852	\$ 48,687	\$ 1,809,128
2023									\$ 145,125	\$ 145,125	\$ 89,630	\$ 35,852	\$ 51,223	\$ 1,860,351
2024									\$ 149,479	\$ 149,479	\$ 89,630	\$ 35,852	\$ 53,835	\$ 1,914,186
2025									\$ 153,963	\$ 153,963	\$ 89,630	\$ 35,852	\$ 58,526	\$ 1,972,712
2026									\$ 158,582	\$ 158,582	\$ 89,630	\$ 35,852	\$ 59,297	\$ 2,032,009

Geothermal HVAC systems are classified as "Energy Property" which are eligible for 5 yr MACRS depreciation and a special depreciation allowance  
 Conventional HVAC systems are generally only eligible for 39 yr (27.5 yr residential) straightline depreciation under tax code with no special depreciation allowance  
 Analysis assumes a mid-quarter depreciation convention based on the substantial completion quarter  
 Tax credits may be carried back up to 3 years for credits arising in tax years beginning after 12/31/22  
 Tax credits may be transferred (generally sold at some discount) to an unrelated party beginning in 2023  
 Energy credit limited to 10% and domestic content and energy community tax credits are not available for projects placed in service before 1/1/23

Simple Payback Years: 0

Internal Rate of Return: infinite

### Installation Comparison

Traditional HVAC **\$3,237,339**

Geothermal **\$3,779,299**

### Geothermal Savings

IRA Tax Credit **\$366,793**

Savings per Sq Ft **1.00**

### Geo Cumulative Savings

Year 1 **\$1,192,401**

Year 5 **\$1,760,441**

Year 10 **\$2,032,009**

# IRA ECONOMICS

## 80% Bonus and 5 Year MACRS Depreciation



**ClimateMaster** Geothermal HVAC Economics - using Special Depreciation Allowance Updated 3-22-23 based on current data  
This is an estimating tool only. [Click Here](#) for Disclaimer, Terms & Conditions

Project Name:

Conditioned Area (sq ft):  Vertical Market:  State:   
 sq ft per ton:  Tip: 400 sq ft per ton is a typical rule of thumb for commercial buildings. Variables that effect this include glass area and type, insulation values, lighting and plug load, etc.  
 Calculated HVAC Tons:  Brief Description:  Business Type:

Geothermal Costs				vs.	Conventional Costs			
Geothermal HVAC Cost	<input type="text" value="\$29.34"/>	per sq ft		Conventional HVAC Cost	<input type="text" value="\$25.87"/>	per sq ft		
	<input type="text" value="\$8,506"/>	per ton				<input type="text" value="\$7,500"/>		per ton
	<input type="text" value="\$ 3,462,120"/>	Total Geothermal HVAC Cost				<input type="text" value="\$ 3,052,660"/>		Total Conventional HVAC Cost
<small>Describe your Geothermal System:</small> <input type="text" value="i.e. 30 EER geothermal heat pumps"/>				<small>Describe your Conventional HVAC System:</small> <input type="text" value="i.e. Rooftop single-duct VAV with electric terminal reheat"/>				

Additional Cost: \$ 409,460  
 Utility Rebate\* \$ (237,281)  
 Net Additional Cost: \$ 172,179  per ton estimate of utility geo rebate Tip: Varies based on region and incentives. Consult your local energy program specialist for insight.

Other Installation Costs\*\*:  portion of electrical, plumbing and GC fees related to HVAC system (for either system) Tip: Rely on your experience / cost quotes to estimate this number

Income Tax Rate:  Corporate / Federal  State  Based on business type and state table in Input Data Tab  
 Energy Credit:  Domestic Content Credit:  Energy Community Credit:  Tip: Choose applicable credit rate % under IRA Guidelines

Energy Inflation:  Tip: This number typically follows economic inflation trends. Generally between 2% to 6%  
 Savings per sq ft:  in energy and maintenance Tip: Lean on the experience of your trusted HVAC professional to estimate this savings vs. alternative systems

Annual Cost Savings:  calculated

Project Completion Year:  Project Completion Quarter:

YEAR	GEO DEPREC ALLOWANCE		GEO DEPREC DEDUCTION		GEO TAX SAVINGS***			GEO CASH FLOW			CONV CASH FLOW		GEO NET CASH FLOW	
	Special	5 Yr MACRS	Special	5 Yr MACRS	Tax Credits	Depreciation	Addtl Cost	Tax Savings	O&M Savings	Total	Depr Ded	Tax Savings	Annual	Cumulative
2023	80%	35.00%	\$ 2,009,903	\$ 175,867	\$ 1,674,920	\$ 590,158	\$ (172,179)	\$ 2,265,077	\$ 88,500	\$ 2,181,398	\$ 81,478	\$ 21,999	\$ 2,159,399	\$ 2,159,399
2024		26.00%		\$ 130,644		\$ 35,274		\$ 35,274	\$ 121,540	\$ 156,814	\$ 81,478	\$ 21,999	\$ 134,815	\$ 2,294,214
2025		15.60%		\$ 78,386		\$ 21,164		\$ 21,164	\$ 125,186	\$ 146,350	\$ 81,478	\$ 21,999	\$ 124,351	\$ 2,418,565
2026		11.01%		\$ 55,323		\$ 14,937		\$ 14,937	\$ 128,942	\$ 143,879	\$ 81,478	\$ 21,999	\$ 121,880	\$ 2,540,445
2027		11.01%		\$ 55,323		\$ 14,937		\$ 14,937	\$ 132,810	\$ 147,747	\$ 81,478	\$ 21,999	\$ 125,748	\$ 2,666,193
2028		1.38%		\$ 6,934		\$ 1,872		\$ 1,872	\$ 136,794	\$ 138,667	\$ 81,478	\$ 21,999	\$ 116,667	\$ 2,782,860
2029									\$ 140,898	\$ 140,898	\$ 81,478	\$ 21,999	\$ 118,899	\$ 2,901,759
2030									\$ 145,125	\$ 145,125	\$ 81,478	\$ 21,999	\$ 123,126	\$ 3,024,885
2031									\$ 149,479	\$ 149,479	\$ 81,478	\$ 21,999	\$ 127,480	\$ 3,152,365
2032									\$ 153,963	\$ 153,963	\$ 81,478	\$ 21,999	\$ 131,964	\$ 3,284,329
2033									\$ 158,582	\$ 158,582	\$ 81,478	\$ 21,999	\$ 136,583	\$ 3,420,912

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Simple Payback Years: 0

Internal Rate of Return: infinite

### Installation Comparison

**Traditional HVAC**      **\$3,237,339**

**Geothermal**            **\$3,779,299**

### Geothermal Savings

**IRA Tax Credit**        **\$1,674,920**

**Savings per Sq Ft**      **1.00**

### Geo Cumulative Savings

**Year 1**                    **\$2,159,399**

**Year 5**                    **\$2,762,880**

**Year 10**                  **\$3,428,912**

# REAL SUCCESS

## Geothermal Project Portfolio



<b>PROJECT TYPE</b>	<b>Qty of Projects</b>	<b>Total Square Feet</b>	<b>Smallest Square Feet</b>	<b>Largest Square Feet</b>
<b>Office</b> – Office/Bank/Medical	<b>37</b>	<b>959,000</b>	<b>3,200</b>	<b>118,000</b>
<b>Public</b> – Fire Stations/Museums/Community Centers/ Religious	<b>8</b>	<b>119,000</b>	<b>2,000</b>	<b>42,000</b>
<b>Charities</b> – Office/Shelters	<b>7</b>	<b>156,000</b>	<b>7,800</b>	<b>40,000</b>
<b>Multi-Family</b>	<b>3</b>	<b>100,000</b>	<b>30,000</b>	<b>40,000</b>
<b>Assisted Living</b>	<b>1</b>	<b>88,000</b>	<b>88,000</b>	<b>88,000</b>
<b>Education</b>	<b>5</b>	<b>109,000</b>	<b>11,000</b>	<b>44,000</b>
<b>Lodging</b> - Convention	<b>1</b>	<b>130,000</b>	<b>130,000</b>	<b>130,000</b>
<b>Retail</b> – Stores/Spas/Recreational	<b>7</b>	<b>132,000</b>	<b>6,800</b>	<b>61,000</b>
<b>Manufacturing</b>	<b>3</b>	<b>510,000</b>	<b>25,000</b>	<b>375,000</b>
<b>Industrial</b> – Office with Warehouse	<b>21</b>	<b>1,022,000</b>	<b>2,000</b>	<b>507,000</b>
<b>Auto / Truck Dealerships</b>	<b>10</b>	<b>572,000</b>	<b>19,100</b>	<b>136,400</b>
	<b>102</b>	<b>3,897,000</b>		

# NEXT STEPS



## Inflation Reduction Act

### IRA Geothermal Incentives

- Residential Tax Credit up to 30%
- Commercial Tax Credit up to 50%
- Accelerated Depreciation
- Non-Taxable Entity Direct Rebate
- State & Local Rebates
- Geothermal Efficiency & ROI





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YES. We would love to follow up with you.

We know you couldn't make it to all of our presentations, it's a busy week! We hope you enjoyed your time. Let us know which content you'd like us to send you and we will reach out to you next week!



# Let's Talk

Scan me



## Sources:

Energy Information Administration - <https://www.eia.gov>

SBC Magazine - <http://sbcmag.info>

Energy Tax Savers - [IRA Incentive Discussion - YouTube](#)

World Wildlife Organization - <https://worldwildlife.org>

NYSERDA - <https://www.nyserda.ny.gov>

## Disclaimer:

We are not tax professionals and the information provided in this presentation should not be interpreted as tax advice. Please consult with your own accountant and/or attorney for guidance on claiming any of the following incentives.